

REMARKS

In this Amendment, claims 15, 17, 19-21, 24-27, 30, 31, 33 and 35 are amended, claims 16, 18, 22, 23, 28, 29, 32 and 36 are cancelled, new claims 37-41 are added. Accordingly, claims 15, 17, 19-21, 24-27, 30, 31, 33-35 and 37-41 are pending in the present application. No new matter has been introduced through this Amendment.

Claim Rejection – 35 USC § 112

Claims 33 and 34 stand rejected under 35 U.S.C. 112 as having insufficient written description. More specifically, claim 33 stands rejected, because the phrase “a second radio resource block” is deemed not supported by the original specification. Claim 34 stands rejected, because the phrase “wherein an identifier for the at least one second subscriber terminal and the number of the at least one second subscriber terminal are not mapped to the second common control information” is deemed not supported by the original specification. Applicants respectfully traverse the written description rejection in light of the following facts:

As described at page 8, paragraph [63] of the specification as originally filed, “the radio resource according to the preferred embodiment of the present invention comprises two-dimensional radio resource blocks WM1 to WM8”, Applicants respectfully submit that a person of ordinary skill in the art can understand naming one of the radio resource blocks as “the first radio resource block” and naming one of the other radio resource blocks as “the second radio resource block”. Therefore, the phrase “a second radio resource block” is supported by the specification as originally filed, and the rejection of claim 33 should be withdrawn.

Page 9, paragraph [67] of the specification, as originally filed, describes that radio resource blocks WM1 to WM4 are directly accessed by the subscriber stations when receiving and reading the common control information block, based on the concerns of saving the processing time and

minimizing the size of the common control information block. In addition, Page 9, paragraph [69] of the specification, as originally filed, describes “if the station knows a rule that the subscriber identification information on the radio resources WM1 to WM4 is not included in the common control information block), the station directly accesses the radio resources WM1 to WM4 to find radio resource blocks allocated to the station (without reading the subscriber identification information from the common control information block).” Based on the above disclosure of the specification, Applicants respectfully submit that a person of ordinary skill in the art can understand that in some of the embodiments of the present application, the common control information block may include only the allocation information of the first radio resource block, and the allocation of the second radio resource block is not mapped to the common control information block. Therefore, claim 34 is fully supported by the specification as originally filed, and the rejection of claim 34 should be withdrawn.

Claim Rejection – 35 USC § 103

Claims 15-36 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Terry* (US Pub No.: 2002/0168944) in view of *Cave* (US Pub No.: US 2004/0116126). Applicants respectfully submit that claims 15 is patentable over *Terry* and *Cave* in view of the foregoing amendments and following arguments.

Claim 15, as amended, now recites the following limitations:

“mapping, to a first region of a common control information of the downlink radio resource, allocation information for at least one subscriber terminal corresponding to a second region of the radio resource in a downlink frame composed of a predetermined number of symbols and a predetermined number of subchannels; and

transmitting the common control information to the at least one subscriber terminal in a

time duration of the downlink frame;

wherein the allocation information including:

at least one identifier for the at least one subscriber terminal and number of the at least one subscriber terminal; and

symbol offset information and subchannel offset information indicating a two-dimensional position of the second region in the downlink frame.”

Applicants respectfully submit that both *Terry* and *Cave* fail to disclose, teach or suggest mapping allocation information including symbol offset information and subchannel offset information indicating a two-dimensional position of the second region in the downlink frame, because *Terry* and *Cave* are directed to CDMA or TDD technology, and fail to disclose transmitting information from radio resource in a downlink frame composed of a predetermined number of symbols and a predetermined number of subchannels.

Terry discloses an allocation method of code-divisional multiple access (CDMA) technology (Paragraph [0002]). *Terry* discloses an enhanced transmission quality by measuring the channel quality with pending downlink transmissions (Paragraph [0019] – [0020]) and determining the best modulation/coding rate and the best time slot to use the measured channel (Paragraph [0023]). Nowhere does *Terry* teach or suggest a transmission in a downlink frame composed of a predetermined number of symbols and a predetermined number of subchannels.

Cave discloses a system that provides a fast feed back mechanism for notifying WTRUs (wireless transmit/receive units) of success or failure of a transmission over a contention-based channel (Paragraph [0012]). *Cave* discloses using an Acquisition Indicator Channel (AICH) to acknowledge the safe receipt of a UL (upper link) RACH transmission in a fast manner in the Time Division Duplex (TDD) mode. Nowhere does *Cave* teach or suggest a transmission in a

downlink frame composed of a predetermined number of symbols and a predetermined number of subchannels.

As depicted in numerous places of the present application, the claimed invention performs the transmitting of allocation information based on a downlink frame that is composed of a two-dimensional structure. The downlink frame, according to the present invention, is composed of a predetermined number of symbols and a predetermined number of subchannels. Also, according to the structure of the downlink frame, the allocation information includes symbol offset information and subchannel offset information indicating a two-dimensional position of a radio resource that is allocated to a subscriber terminal.

Based on the above reasons, even if *Terry* and *Cave* could be properly combined, the combination of *Terry* and *Cave* fails to disclose all of the limitations of claim 15, in particular, mapping allocation information including symbol offset information and subchannel offset information indicating a two-dimensional position of the second region in the downlink frame, and transmitting information from radio resource in a downlink frame composed of a predetermined number of symbols and a predetermined number of subchannels. Accordingly, the obviousness rejection of claim 15 is respectfully requested to be withdrawn.

Claims 17, 19 and new claim 37 depend from claim 15, and are patentable for at least any relevant reason set forth above with respect to claim 15. Accordingly, the obviousness rejection of claims 17, 19 should be withdrawn.

Independent claim 20 directs to a method for a subscriber terminal to access a downlink radio resource, and claim 20 recites similar limitations as claim 15, in particular, “a downlink frame composed of a predetermined number of symbols and a predetermined number of

subchannels” and “accessing a radio resource block by using symbol offset information and subchannel offset information corresponding to the searched allocation information.” Accordingly, claim 20 is also believed patentable for at least any relevant reasons set forth above with respect to claim 15, and the rejection of claim 20 should be withdrawn.

Claims 21, 24 and new claims 38 and 39 depend, either directly or indirectly, from claim 20, and are patentable for at least any relevant reasons set forth above with respect to claim 20. Accordingly, the obviousness rejection of claims 21, 24 should be withdrawn.

Independent claim 25 directs to an apparatus for transmitting allocation information of downlink radio resource to a subscriber terminal. Claim 25 recites similar limitations as claim 15, in particular, “...in a downlink frame composed of a predetermined number of symbols and a predetermined number of subchannels” and “symbol offset information and subchannel offset information indicating a two-dimensional position of the second region in the downlink frame.” Accordingly, claim 25 is patentable for at least any relevant reasons set forth above with respect to claim 15, and the rejection of claim 25 should be withdrawn.

Claims 26, 27 and new claim 40 depend from claim 25, and are patentable for at least any relevant reasons set forth above with respect to claim 25. Accordingly, the obviousness rejection of claims 26 and 27 should be withdrawn.

In dependent claim 30 directs to a method of generating downlink frame in an OFDMA (Orthogonal Frequency Division Multiple Access) communication system, and claim 30 recites similar limitations as claim 15, in particular, “a downlink frame composed of the predetermined number of symbols and the predetermined number of subchannels” and “symbol offset information and subchannel offset information indicating a two-dimensional position of the radio

resource block in the downlink frame.” Accordingly, claim 30 is patentable for at least any relevant reasons set forth above with respect to claim 15, and the rejection of claim 30 should be withdrawn.

Claims 31 and new claim 41 depend from claim 30, and are patentable for at least any relevant reasons set forth above with respect to claim 30. Accordingly, the obviousness rejection of claims 31 should be withdrawn.

Independent claim 33 directs to a method of generating downlink frame in an OFDMA (Orthogonal Frequency Division Multiple Access) communication system, and recites similar limitations as claim 15, in particular, “a downlink frame composed of the predetermined number of symbols and the predetermined number of subchannels” and “symbol offset information and subchannel offset information indicating a two-dimensional position of the first radio resource block in the downlink frame.” Accordingly, claim 33 is patentable for at least any relevant reason set forth above with respect to claim 15, and the rejection of claim 33 should be withdrawn.

Claims 34 and 35 depend from claim 33, and are patentable for at least any relevant reasons set forth above with respect to claim 33. Accordingly, the obviousness rejection of claims 34 and 35 should be withdrawn.

In this amendment, claims 16, 18, 22, 23, 28, 29, 32 and 36 have been cancelled. Accordingly, the obviousness rejection of these claims are deemed moot.

Conclusion

It is respectfully submitted that the application is in condition for allowance and a Notice to that effect is earnestly solicited.

The Examiner is invited to telephone the undersigned, Applicant's attorney of record, to

facilitate advancement of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,
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